What is claimed is:

1	A method for coating an implant comprising the
2	steps of
3	igg angle (a) contacting the implant with an aqueous
4	solution of magnesium, calcium, and phosphate ions;
5	(b) passing a gaseous weak acid through the
6	aqueous solution;
7	(c) degassing the aqueous solution; and
8	(d) allowing the magnesium, calcium, and
9	phosphate ions to precipitate onto the implant to form a
10	coating.
1	2. The method claim 1 wherein the gaseous weak
2	acid is carbon dioxide
1	3. The method of claim 1 wherein the implant is
2	formed from one or more of metal, organic material, polymer
3	or ceramic.
- 1	4. The method according to claim 1 wherein the
2	calcium and phosphate ions are present in the aqueous
3	solution in a molar ratio of between about 1 to about 3.
1	5. The method according to claim 1 wherein the
2	calcium and phosphate ions are present in the aqueous
3	solution in a molar ratio of between about 1.5 to about
4	2.5.
. 1	6. The method according to claim $1 \setminus $ wherein the
2	aqueous solution comprises about 0.5 to about 50 mM calcium
3	ions and about 0.5 to about 20 mM phosphate ions.
4	7. The method according to claim 1 wherein the
5	aqueous solution comprises about 2.5 to about 25 mM calcium
6	ions and about 1.0 to about 10 mm shorthard

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1	$8 \ $ The method according to claim 1 wherein the
2	aqueous solution comprises about 0.1 to about 20 mM
3	magnesium ions.
l	9. The method according to claim 1 wherein the
2	aqueous solution comprises about 1.5 to about 10 mM
3	magnesium ions.
•	10 Mbs made

- 10. The method according to claim 1 wherein the aqueous solution comprises no carbonate ions or less than about 50 mM carbonate ions.
- 11. The method according to claim 1 wherein the aqueous solution comprises no carbonate ions or less than about 42 mM carbonate ions
- 12. The method according to claim 1 wherein the aqueous solution comprises an ionic strength in the range of about 0.1 to about 2 M.
- 13. The method according to claim 1 wherein the aqueous solution comprises an ionic strength in the range of about 0.15 to about 1.5 M.
- 14. The method according to claim 1 wherein the gaseous weak acid is passed through the aqueous solution at a pressure of about 0.1 to about 10 bar.
- 15. The method according to claim 1 wherein the gaseous weak acid is passed through the aqueous solution at a pressure of about 0.5 to about 1.5 bar.
- 16. The method according to claim 1 wherein the aqueous solution has a temperature in the range of between about 5°C to about 80°C.





17.	The	method	according	to	claim	1,	where	ein	the
aqueous	€ oluti	on has a	temperatu	re in	n the	range	e of	bet	veer
about 5°	'C\to a	bout 50°	°C.		• .				

- 18. The method according to claim 1 wherein the implant is treated by a mechanical or chemical surface treatment prior to contacting the implant with the aqueous solution.
- 19. The method of claim 18 wherein the implant is treated by sand-blasting, scoring, polishing or grounding.
- 20. The method of claim 18 wherein the implant is treated by contacting with strong mineral acid or an oxidizing agent in a manner to etch the implant.
- 21. The method of claim 1 wherein the coating comprises magnesium ions, calcium ions and phosphate ions and one or more ions selected from the group consisting of hydroxide, carbonate, chloride, sodium and potassium.
- 22. The method of claim 1 wherein the coating comprises one or more of amorphous carbonate calcium phosphate, hydroxyapatite, calcium deficient and hydroxyl carbonate apatite, oroctacalcium phosphate, dicalcium phosphate dihydrate or calcium carbonate.
- 23. The method of claim 1 wherein the coating has a thickness of about 0.5 to about 100 microns.
- 24. The method of claim 1 wherein the coating has a thickness of about 0.5 to about 50 microns.

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1 25. The method of claim 1 further comprising the step 2 of contacting a coated implant with a calcifying solution 3 comprising calcium and phosphate ions, and allowing a 4 precipitate layer of calcium and phosphate ions to form on 5 the coated implant.

- 26. A device for coating an implant comprising
 - (a) reactor vessel;
- (b) heating element operatively connected to the reactor vessel;
 - (c) implant support;
 - (d) stirrer disposed within the reactor vessel;
- (f) inlet and outlet operatively connected to the reactor vessel; and
- (g) controlled source of carbon dioxide operatively connected to the inlet.

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